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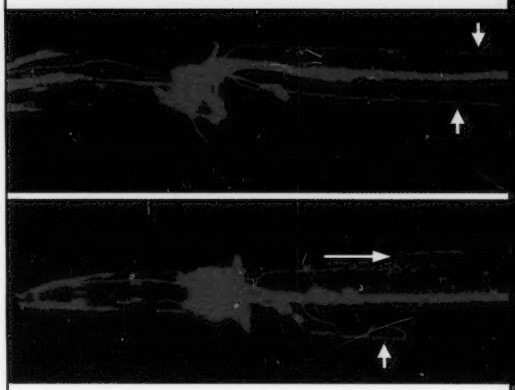

Migrating neurons (arrows) have no sense of direction (bottom) without the LAD-2 cell adhesion molecule.
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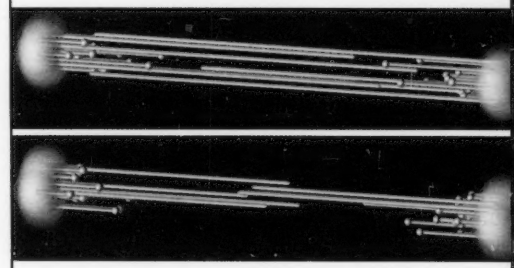

Microtubule-binding Bim1 keeps scaffolding microtubules (blue) long and stable (top) to support the anaphase spindle.
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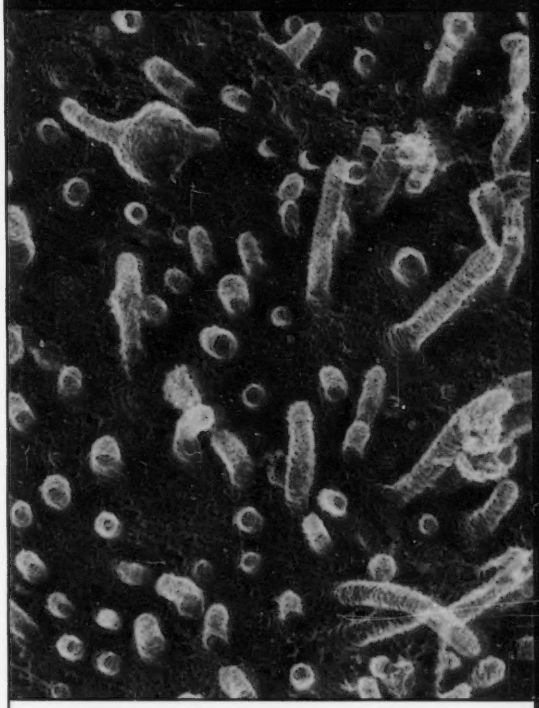

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3D images reveal that rings of the ESCRT-III protein drive the formation of membrane buds and tubules that might help form multivesicular bodies (3D glasses provided on inside cover; left eye red).
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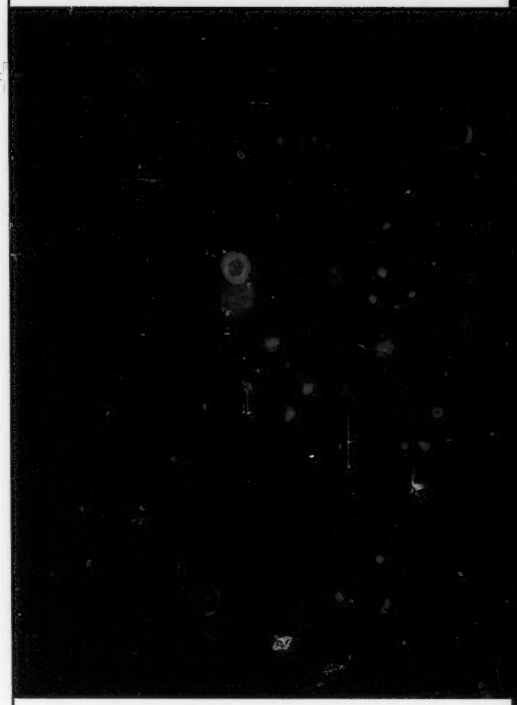

Chromatin (green) from apoptotic cells persists undegraded within phagosomes (red circles) in worm mutants lacking the small GTPase Rab2.
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507 Stable hZW10 kinetochore residency, mediated by hZwint-1 interaction, is essential for the mitotic checkpoint
Jakub K. Famulski, Larissa Vos, Xuejun Sun, and Gordon Chan

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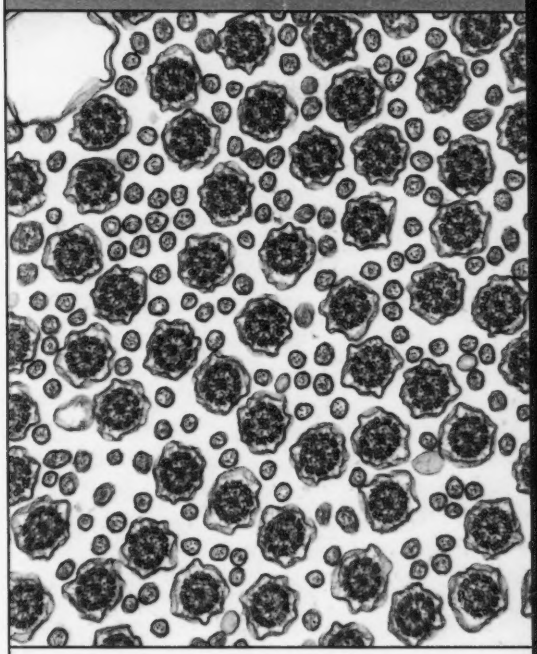

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The regular beating of cilia (shown) requires hydin.
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521 Australin: a chromosomal passenger protein required specifically for *Drosophila melanogaster* male meiosis
Shan Gao, Maria Grazia Giansanti, Graham J. Buttrick, Sharada Ramasubramanyan, Adam Auton, Maurizio Gatti, and James G. Wakefield

537 Akt regulates centrosome migration and spindle orientation in the early *Drosophila melanogaster* embryo
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645 A molecular specificity code for the three mammalian KDEL receptors
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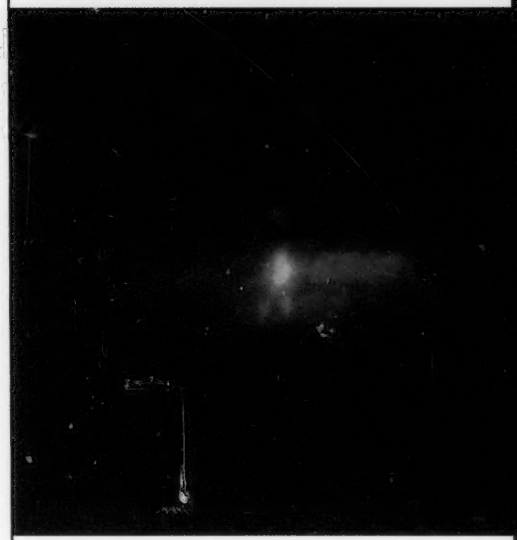
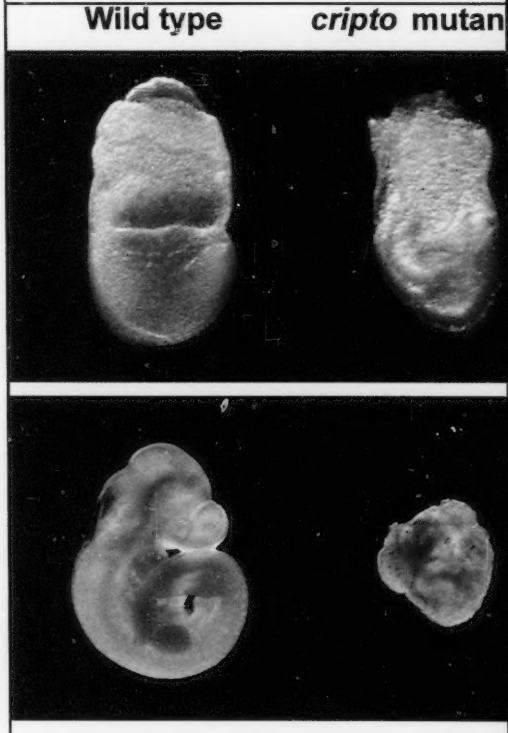


Sperm-specific Australin (red) recruits fellow chromosomal proteins during chromosome (blue) segregation.
See page 521.



Cripto helps create early embryo axis polarity without the help of Nodal (top). But if these two don't interact, later development fails (bottom).
See page 597.

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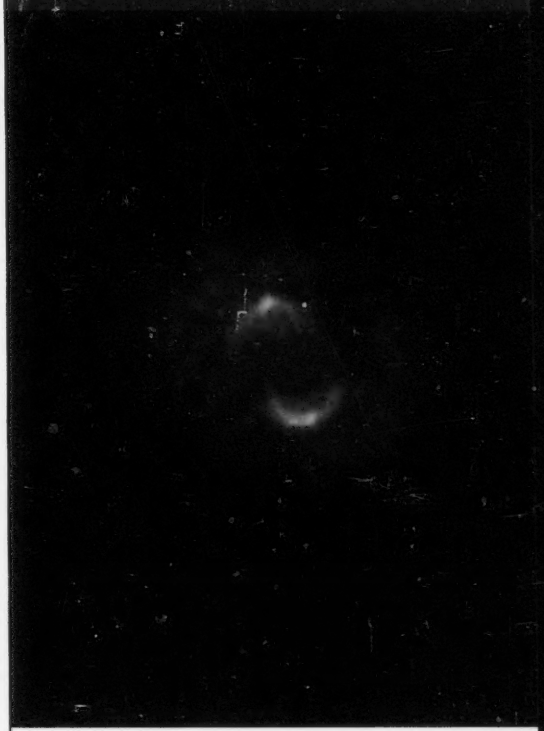

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681 Integrin-linked kinase localizes to the centrosome and regulates mitotic spindle organization
Andrew B. Fielding, Iveta Dobreva, Paul C. McDonald, Leonard J. Foster, and Shoukat Dedhar

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697 Nuclear polyglutamine-containing protein aggregates as active proteolytic centers
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705 Identification of ERGIC-53 as an intracellular transport receptor of α_1-antitrypsin
Beat Nyfeler, Veronika Reiterer, Markus W. Wendeler, Eduard Stefan, Bin Zhang, Stephen W. Michnick, and Hans-Peter Hauri

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ILK (red), a kinase that helps hook actin to integrins in focal adhesions, is also found on centrosomes, where it helps arrange spindle microtubules (green). See page 681.

713 The yeast p24 complex is required for the formation of COPI retrograde transport vesicles from the Golgi apparatus
Auxiliadora Aguilera-Romero, Joanna Kaminska, Anne Spang, Howard Riezman, and Manuel Muñiz

721 The JAK/STAT pathway positively regulates DPP signaling in the *Drosophila* germline stem cell niche
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729 Dynamic behavior of GFP–CLIP-170 reveals fast protein turnover on microtubule plus ends
Katharina A. Dragestein, Wiggert A. van Cappellen, Jeffrey van Haren, George D. Tsibidis, Anna Akhmanova, Tobias A. Knoch, Frank Grosveld, and Niels Galjart

739 Moesin and its activating kinase Slik are required for cortical stability and microtubule organization in mitotic cells
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747 Four key signaling pathways mediating chemotaxis in *Dictyostelium discoideum*
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755 Endosomal entry regulates Notch receptor activation in *Drosophila melanogaster*
Thomas Vaccari, Han Lu, Ritu Kanwar, Mark E. Fortini, and David Bilder

763 Membrane-anchored growth factor, HB-EGF, on the cell surface targeted to the inner nuclear membrane
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771 SAS-4 is recruited to a dynamic structure in newly forming centrioles that is stabilized by the γ-tubulin–mediated addition of centriolar microtubules
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787 IKK/NF-κB regulates skeletal myogenesis via a signaling switch to inhibit differentiation and promote mitochondrial biogenesis
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803 Integration of Golgi trafficking and growth factor signaling by the lipid phosphatase SAC1
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813 Ergosterol promotes pheromone signaling and plasma membrane fusion in mating yeast
Hui Jin, J. Michael McCaffery, and Eric Grote

827 The somatodendritic endosomal regulator NEEP21 facilitates axonal targeting of L1/NgCAM
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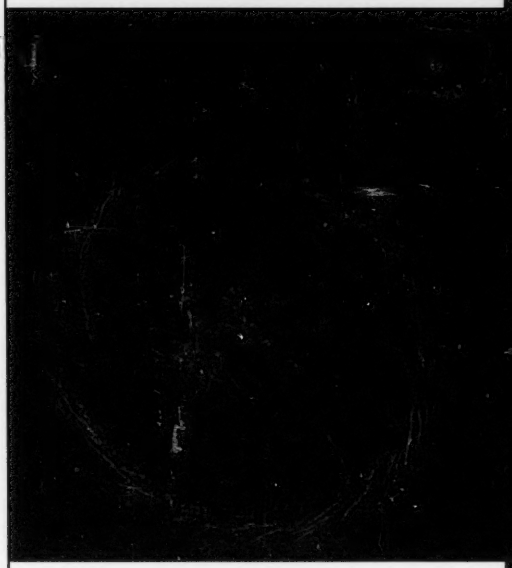
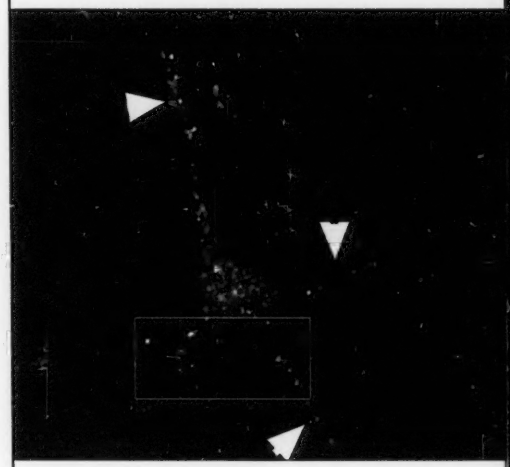
Corrections

843 DNA-activated protein kinase functions in a newly observed S phase checkpoint that links histone mRNA abundance with DNA replication
Berndt Müller, Jane Blackburn, Carmen Feijoo, Xiujie Zhao, and Carl Smythe



Multinucleated cells form in the absence of Moesin, which coordinates microtubule (green) and actin (red) reorganization during mitosis.
See page 739.



NgCAM (red) is endocytosed in dendrites (arrowheads), sorted into recycling endosomes by NEEP21 (green), and then transported to axons.
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867 Cdk11 is a RanGTP-dependent microtubule stabilization factor that regulates spindle assembly rate
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877 PAR proteins direct asymmetry of the cell cycle regulators Polo-like kinase and Cdc25
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887 The structural basis of actin filament branching by the Arp2/3 complex
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897 Human embryonic stem cells in culture possess primary cilia with hedgehog signaling machinery
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905 Repair of injured plasma membrane by rapid Ca^{2+}-dependent endocytosis
Vincent Idone, Christina Tam, John W. Goss, Derek Toomre, Marc Pypaert, and Norma W. Andrews

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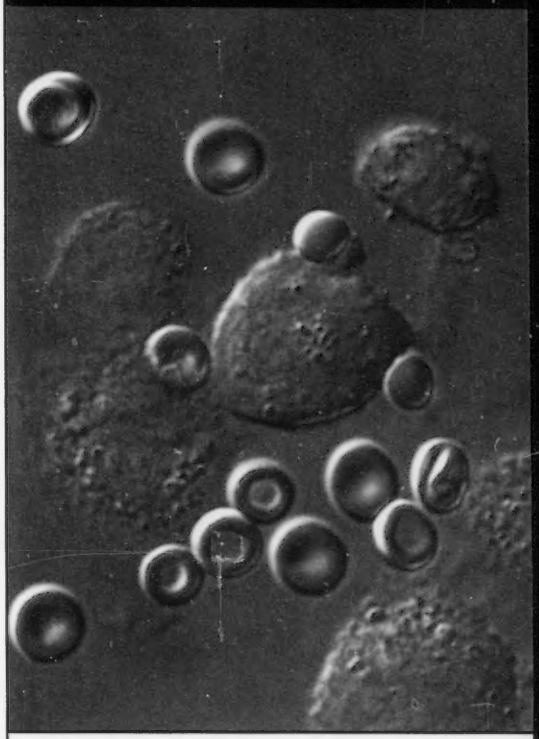

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A macrophage (center) tastes a host red blood cell but stops short of swallowing it. Only foreign cells activate the macrophage's myosin-driven swallowing machinery.
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915 The regulation of SIRT2 function by cyclin-dependent kinases affects cell motility
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931 Regulation of Mih1/Cdc25 by protein phosphatase 2A and casein kinase 1
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947 Essential role of B-Raf in oligodendrocyte maturation and myelination during postnatal central nervous system development
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957 Calpain 2 and PTP1B function in a novel pathway with Src to regulate invadopodia dynamics and breast cancer cell invasion
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973 The *Caenorhabditis elegans* nephrocystins act as global modifiers of cilium structure
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989 Inhibition of "self" engulfment through deactivation of myosin-II at the phagocytic synapse between human cells
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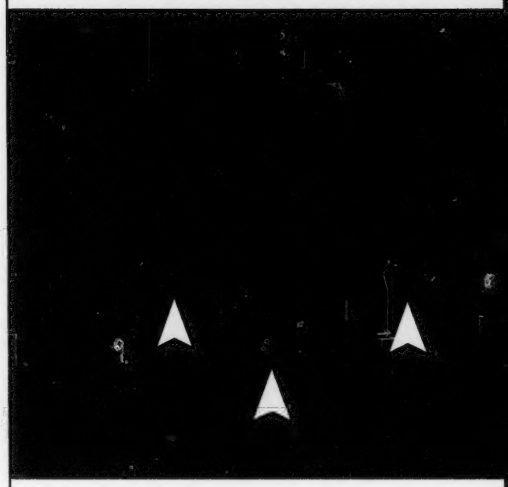

Human embryonic stem cells have cilia (arrowheads) that contain functional hedgehog signaling machinery.
See page 897.

The steps to nuclear pore reassembly during anaphase and telophase are revealed by watching nucleoporins (green) build up on chromosomes (purple).
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1115 Dissection of the essential steps for condensin accumulation at kinetochores and rDNAs during fission yeast mitosis
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Articles with related stories in the IN THIS ISSUE section have page numbers in RED; articles with COMMENTS have page numbers in BLUE.

On the cover

Sarcomere structure is abnormal in mutant cells (red) that lack the Unc45b chaperone, which resides at the Z-line in normal muscle cells (red and green). When the cells are stressed, Unc45b relocates to the A-band (red bands), where it helps fold myosin.
See page 1163.

1133 Protein phosphatase 4 catalytic subunit regulates Cdk1 activity and microtubule organization via NDEL1 dephosphorylation
Kazuhito Toyo-oka, Daisuke Mori, Yoshihisa Yano, Masayuki Shiota, Hiroshi Iwao, Hidemasa Goto, Masaki Inagaki, Noriko Hiraiwa, Masami Muramatsu, Anthony Wynshaw-Boris, Atsushi Yoshiki, and Shinji Hirotsune

1149 An interaction between the SRP receptor and the translocon is critical during cotranslational protein translocation
Ying Jiang, Zhiliang Cheng, Elisabet C. Mandon, and Reid Gilmore

1163 Shuttling of the chaperones Unc45b and Hsp90a between the A band and the Z line of the myofibril
Christelle Etard, Urmas Roostalu, and Uwe Strähle

1177 Impaired ubiquitin–proteasome system activity in the synapses of Huntington's disease mice
Jianjun Wang, Chuan-En Wang, Adam Orr, Suzanne Tydlacka, Shi-Hua Li, and Xiao-Jiang Li

1191 The *Drosophila* CD2AP/CIN85 orthologue Cindr regulates junctions and cytoskeleton dynamics during tissue patterning
Ruth I. Johnson, Midori J. Seppa, and Ross L. Cagan

1205 An endosomally localized isoform of Eps15 interacts with Hrs to mediate degradation of epidermal growth factor receptor
Ingrid Roxrud, Camilla Raiborg, Nina Marie Pedersen, Espen Stang, and Harald Stenmark

1219 Distinct acto/myosin-I structures associate with endocytic profiles at the plasma membrane
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1233 Building the actin cytoskeleton: filopodia contribute to the construction of contractile bundles in the lamella
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1245 WASP family members and formin proteins coordinate regulation of cell protrusions in carcinoma cells
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1261 Concerted regulation of focal adhesion dynamics by galectin-3 and tyrosine-phosphorylated caveolin-1
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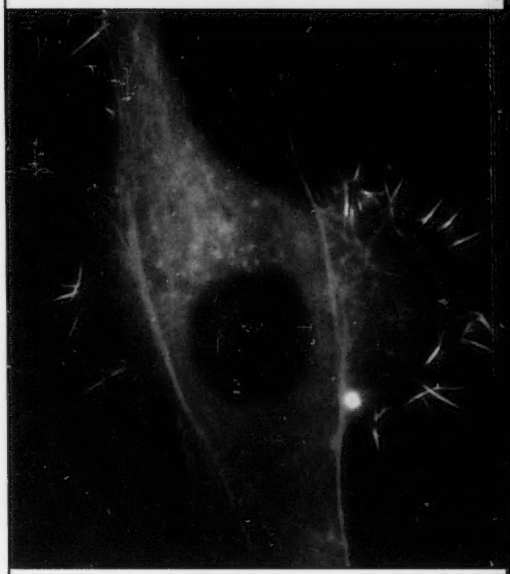
1277 Collagen I–mediated up-regulation of N-cadherin requires cooperative signals from integrins and discoidin domain receptor 1
Yasushi Shintani, Yuri Fukumoto, Nina Chaika, Robert Svoboda, Margaret J. Wheelock, and Keith R. Johnson



In fish fibroblasts, actin bundles from filopodia help generate contractile bundles in the lamella region behind the migrating front.
See page 1233.